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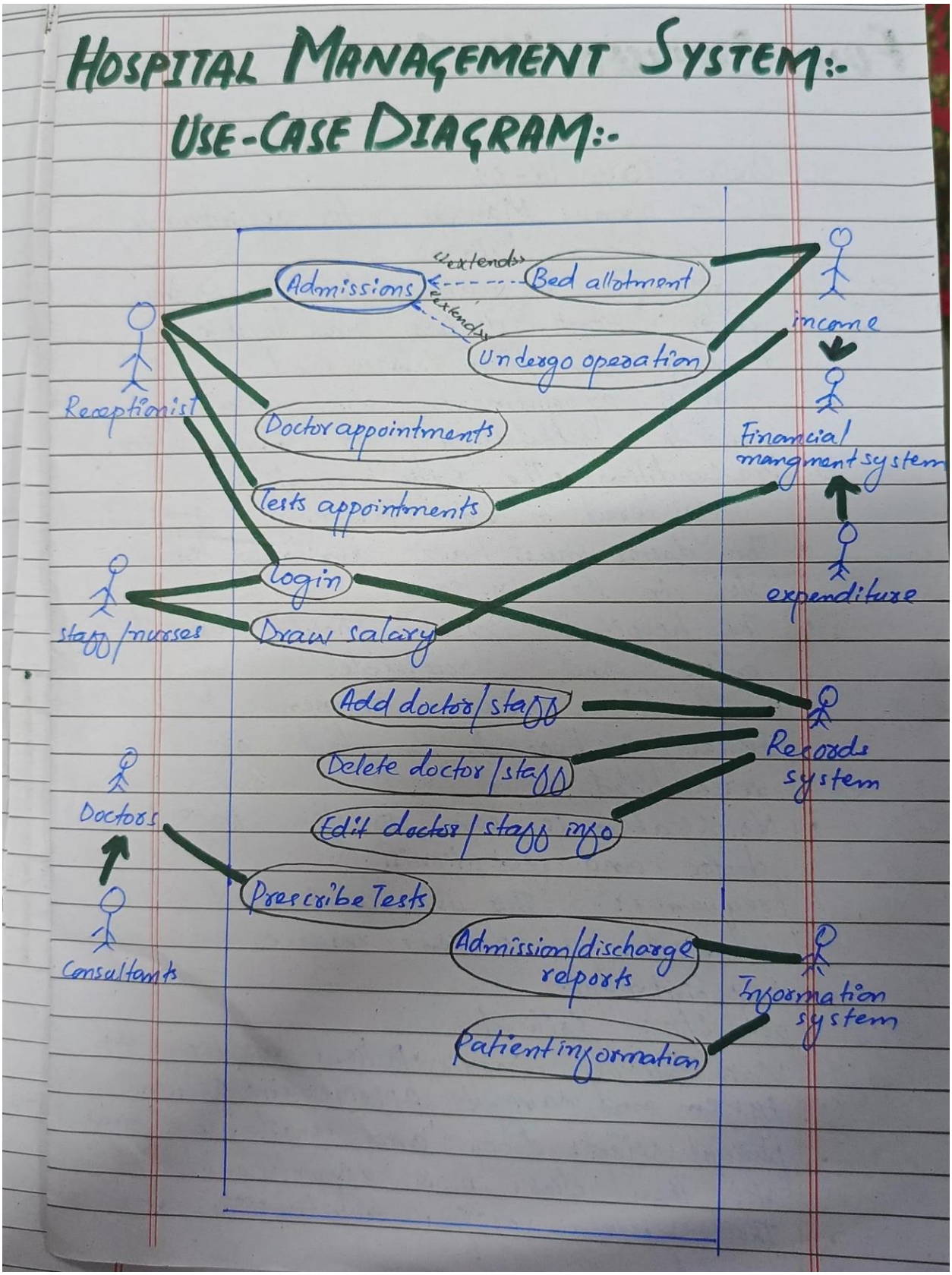
SUBMITTED TO: SIR MUKHTIAR ZAMIN DATE: 10-15-2024

HOSPITAL MANAGEMENT SYSTEM

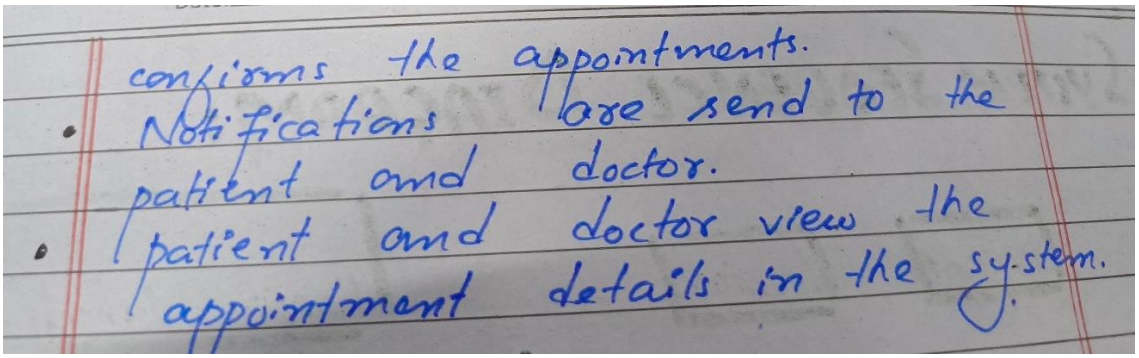
HOSPITAL MANAGEMENT SYSTEM:-

USE-CASE DIAGRAM:-

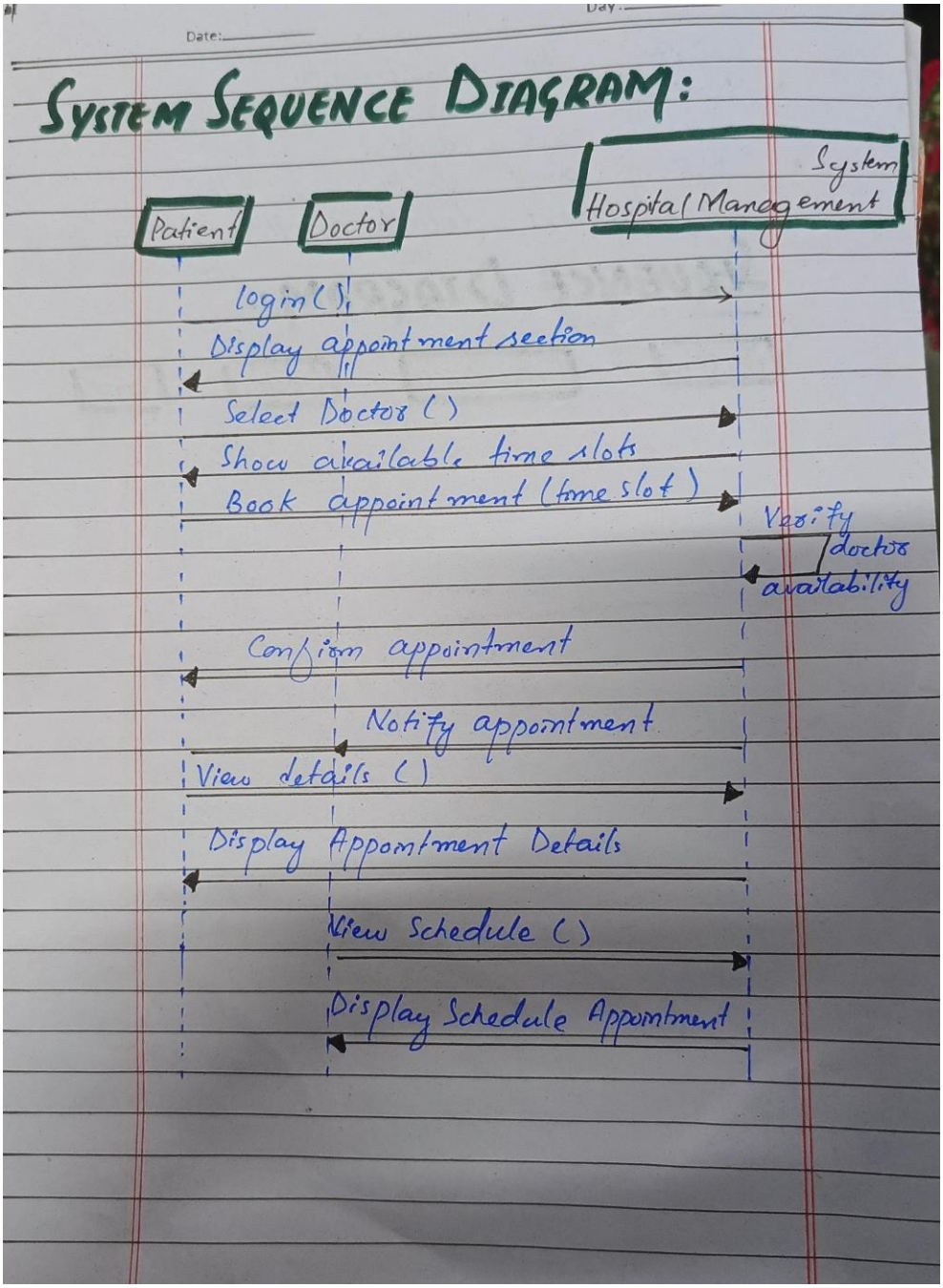


FULLY DRESSED USE CASE :-

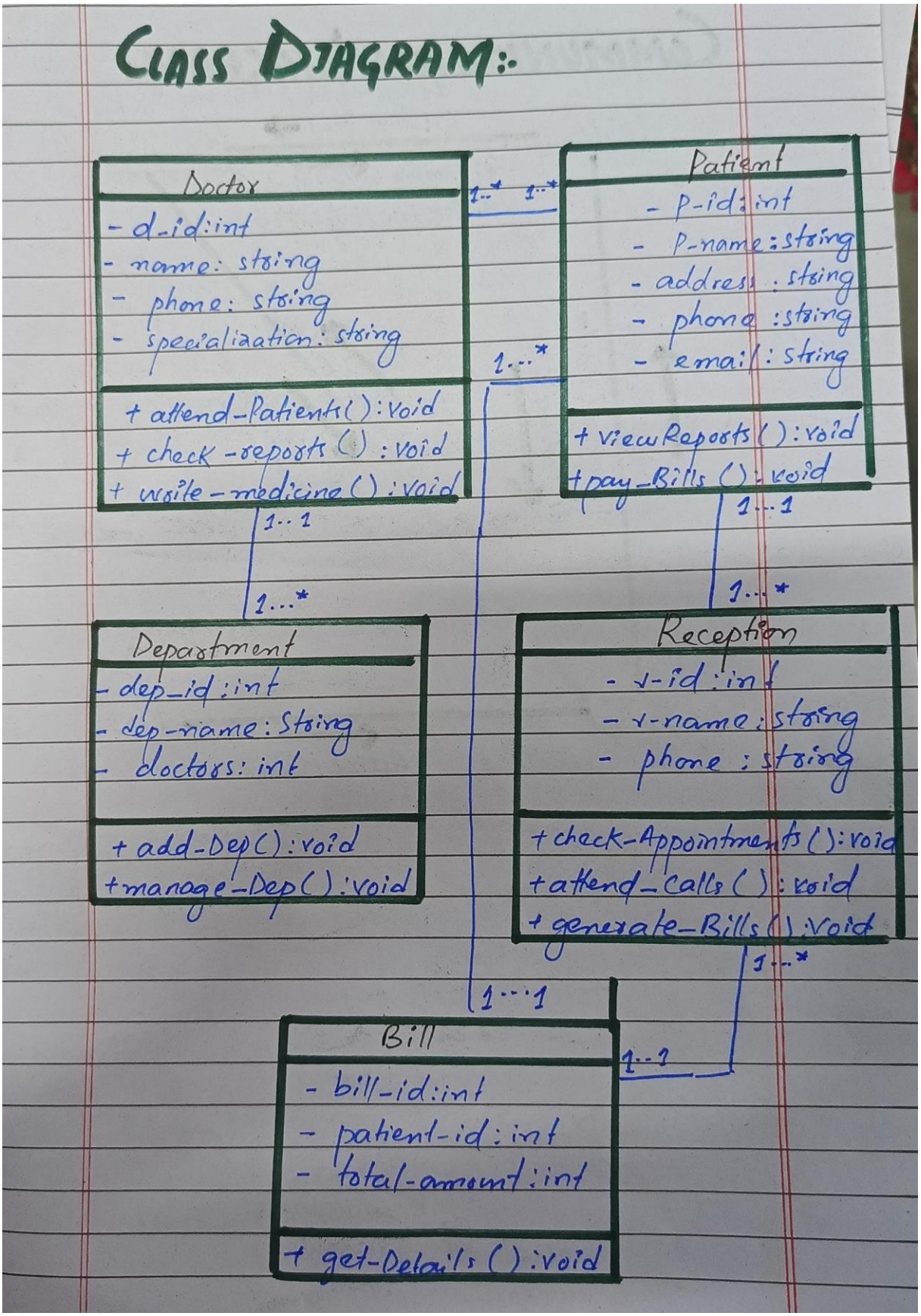
UseCase ID: UC-01
Use Case Name: Manage Doctor appointments
- primary Actor: Patient
- Description: The manage doctor appointments allow patients, doctors and receptionists to efficiently book, view and mange appointments while ensuring smooth scheduling and communication.
- Pre-Condition: • The patient must be registered in the system.
- The doctor must have available time slots in the system.
- The hospital system should be online and accessible.
- Post-Conditions: • The appointment is successfully booked, canceled or rescheduled.
- Notification is send to the patient, doctor and receptionist.
- Frequency: This use case is used whenever a patient reserve an appointment.
- priority: Critical
- Main Success Scenario: • Patient logs into the system and navigate appointment section.
- patient selects doctor and available time slot, then clicks book appointment.
- The system verifies availability and


confirms the appointments.

- Notifications are send to the patient and doctor.
- patient and doctor view the appointment details in the system.

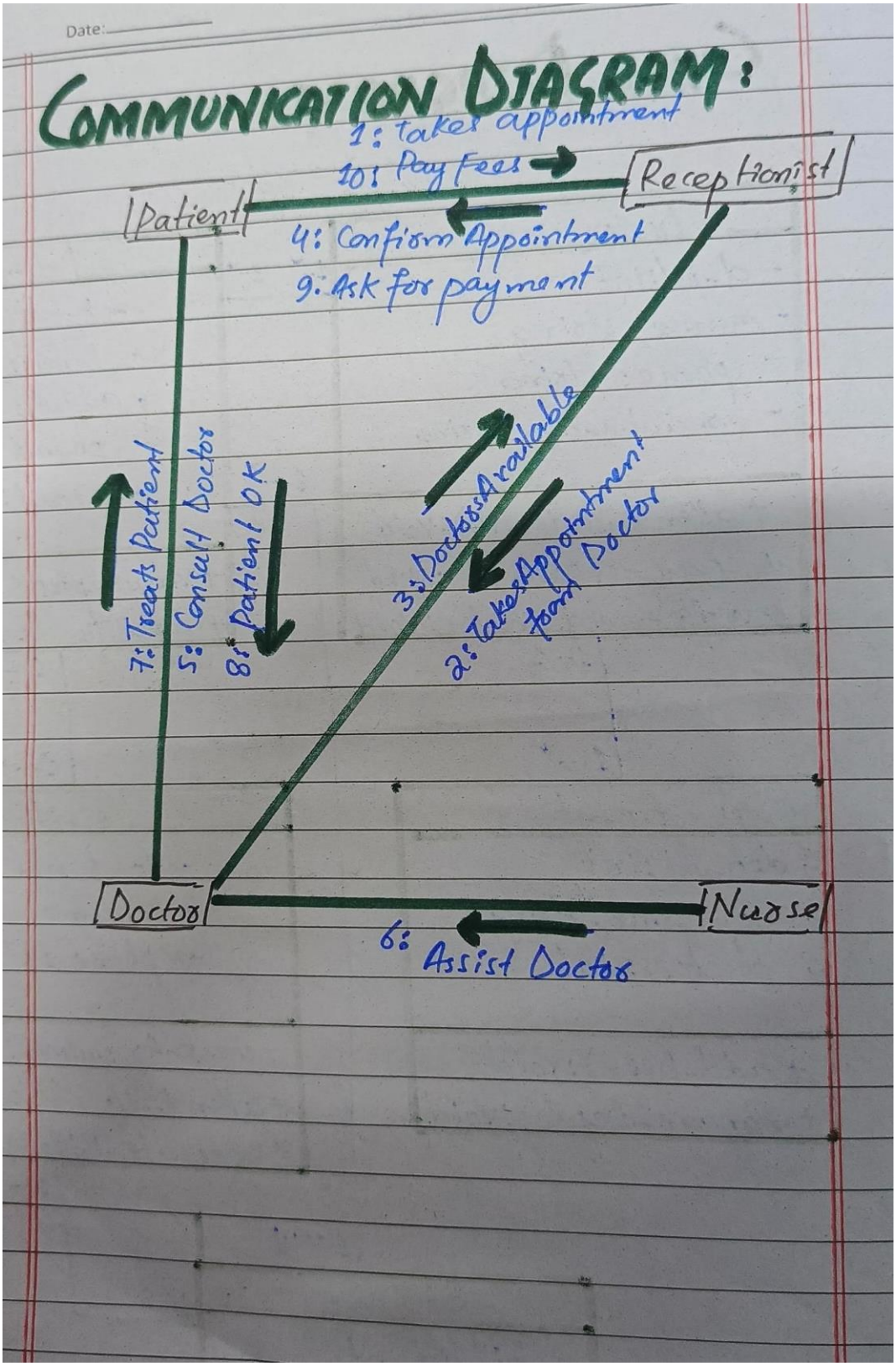

Date:
Day:
System Sequence Diagram:
System
Hospital Management
Patient
Doctor
login ( )
Display appointment section
Select Doctor ( )
Show available time slots
Book appointment (time slot)
Verify doctor availability
Confirm appointment
Notify appointment
View details ( )
Display Appointment Details
View Schedule ( )
Display Schedule Appointment

CLASS DIAGRAM:-



Date:

COMMUNICATION DIAGRAM:



PRINCIPLES USED IN COMMUNICATION DIAGRAM:

LOW COUPLING IN THE DIAGRAM:

- **Receptionist handles separate tasks**: The receptionist's role is distinct from other components, focusing only on taking appointments, confirming them, and asking for payment. This keeps the **receptionist** decoupled from the patient treatment process and the doctor's responsibilities.
- **Patient interaction limited**: The patient interacts primarily with the receptionist for non-medical tasks (appointments, payments) and with the doctor only for treatment. The patient doesn't directly interact with the nurse or other internal processes.

HIGH COHESION IN THE DIAGRAM:

- **Each actor focuses on their role**:
    - The **doctor** only handles medical aspects like treating the patient or canceling appointments when needed.
    - The **nurse** only assists the doctor when necessary, keeping their tasks specific and related to treatment.
    - The **receptionist** deals exclusively with administrative tasks like appointments and payments, without overlapping with treatment duties.
- This separation ensures each actor performs a set of closely related tasks, making the system cohesive.

POLYMORPHISM IN THE DIAGRAM:

- **Receptionist manages both appointments and payments**: The receptionist can handle different types of tasks for different actors (like patients and doctors) but treats these interactions similarly in a flexible way. This concept can be applied in software through polymorphism where one object can manage different types of interactions.
- **Doctor or nurse interaction flexibility**: The nurse and doctor are both involved in patient care but have different roles (doctor treats, nurse assists). The system could treat them similarly while allowing for differences in their actions.

PURE FABRICATION IN THE DIAGRAM:

- **Receptionist role as a fabricated class**: The **receptionist** is responsible for appointments and payment management, which helps offload administrative duties from the doctor and patient. This separate role is not tied to a real-world medical task but is necessary for system structure, showing pure fabrication to keep responsibilities clear and reduce unnecessary coupling.

- **Nurse as an assistant role**: The nurse's role is purely to assist the doctor, a fabricated necessity to help ensure smooth operation, without directly engaging in the core responsibilities of the patient-doctor relationship.

CONTROLLER IN THE DIAGRAM:

- **Receptionist as a system controller**: The **receptionist** acts as the controller in this system by managing the flow of information between the **patient**, **doctor**, and other staff. The receptionist takes appointments, checks if the doctor is available, confirms the appointments, and asks for payment, making them the main point of control for managing appointments and initial interactions.
- **Doctor as a secondary controller**: After the receptionist's initial control, the doctor steps in to manage the medical side by either treating or canceling the patient's appointment based on availability and need, becoming a secondary controller for patient care.